

Implementation of the Core Elements of Antibiotic Stewardship in Nursing Homes – National Healthcare Safety Network (NHSN), 2016-2018

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Background

Antibiotics are frequently prescribed in nursing homes (NHs).¹

Antibiotic stewardship programs are required in NHs.²

- Centers for Medicare & Medicaid Services (CMS) requirement for participation

The Core Elements of Antibiotic Stewardship for NHs are a framework for the implementation of stewardship programs.³

- NHs enrolled in the Centers for Disease Control and Prevention's NHSN Long-term Care Facility (LTCF) Component report on their implementation of the core elements of antibiotic stewardship.

In 2016, 42% of NHs reported implementing all seven core elements.⁴

Objectives

- Track national progress in implementation of the core elements
- Evaluate how time dedicated to infection prevention and control (IPC) is associated with the implementation of the core elements



Methods

NHSN LTCF Annual Surveys, 2016 – 2018

- NH facility and staffing characteristics
- Self-reported implementation of antibiotic stewardship activities
 - Mapped to the seven core elements (≥ 1 corresponding activity)
 - Qualitative analysis of text-based responses

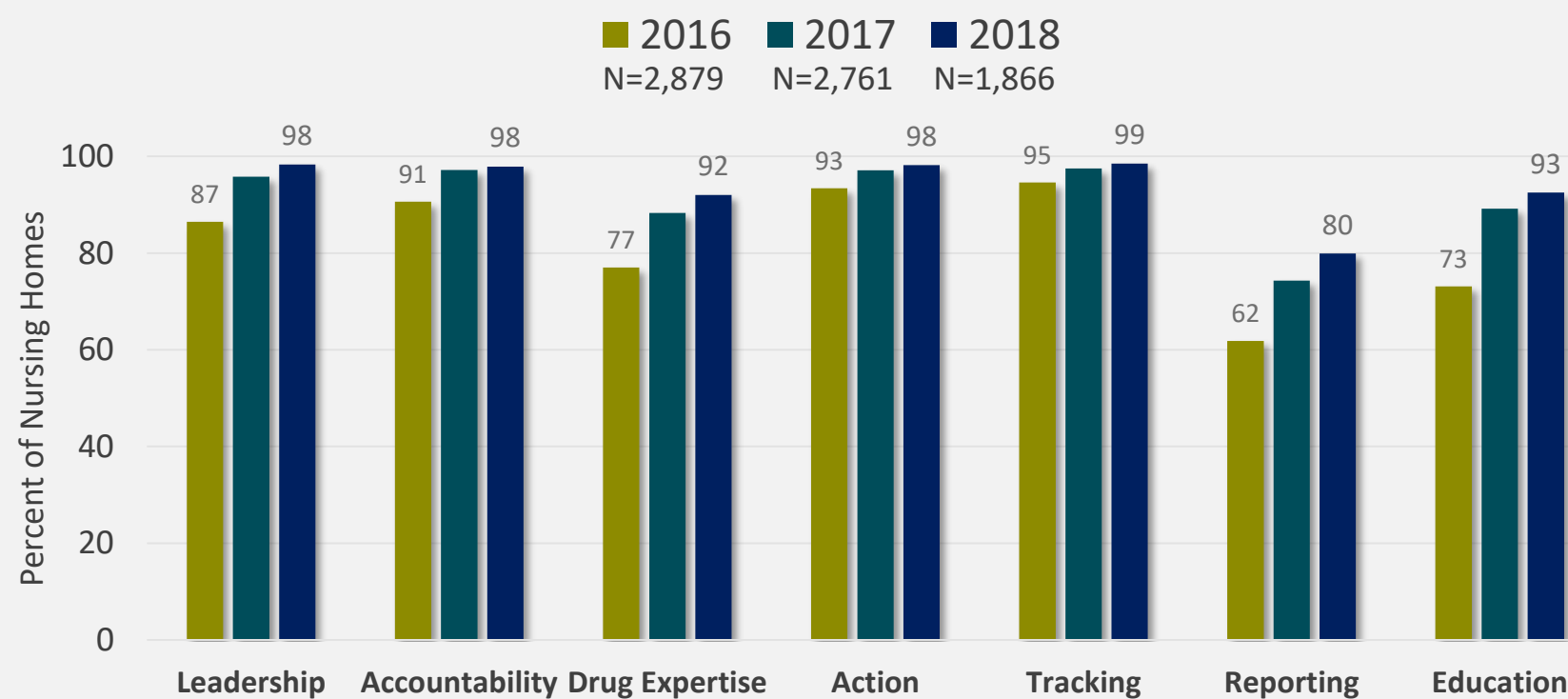
Core Element Implementation

- Determined the percent of NHs implementing all seven core elements and each individual core element
- Log-binomial regression models** used to estimate the association between weekly IPC hours and the implementation of all seven core elements in 2018
 - Controlling for facility characteristics

Results

In 2018, 71% of nursing homes reported implementing all 7 core elements.

Percent of nursing homes implementing core elements by year



Drug Expertise, Reporting, and Education were the core elements with the largest improvements since 2016.

Select Core Elements	2016 N (%)	2018 N (%)
Total Nursing Homes	2,879	1,866
Accountability	2,608 (91)	1,827 (98)
Pharmacist	1,273 (44)	1,321 (71)
Infection Preventionist	587 (20)	566 (30)
Drug Expertise	2,218 (77)	1,717 (92)
Action	2,690 (93)	1,832 (98)
Policy to document indication for antibiotic	2,364 (82)	1,699 (91)
Tracking	2,722 (95)	1,838 (99)
Pharmacy provides monthly antibiotic use report	1,987 (69)	1,514 (81)
Reporting	1,778 (62)	1,490 (80)
Feedback on selection, duration, route, or dosing	1,705 (59)	1,433 (77)

Nursing homes that dedicated at least 20 hours to Infection Prevention and Control activities per week were 14% more likely to implement all seven core elements.

Characteristics associated with core element implementation	Prevalence Ratio (95% CI)
≥20 IPC staff hours Controlling for ownership and affiliation	1.14 (1.07, 1.20)

Conclusions

Limitations

- Decline in facilities reporting to NHSN in 2018
- Voluntary and self-reported, without external validation

Conclusions

- 28% increase in reported implementation of the core elements in NHs from 2016 to 2018
 - Likely driven by CMS requirements
 - Similar to increase in hospitals as a result of antibiotic stewardship accreditation requirement⁵
 - Increased trainings and tools available
 - Potential role for pharmacist to support stewardship implementation in NHs
- Staff hours dedicated to IPC activities may important for antibiotic stewardship implementation.
- Further evaluation of stewardship practices that are most feasible, sustainable, and effective in improving prescribing practices and resident outcomes in NH settings is needed.

References

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